REMARKS

Favorable consideration and allowance are respectfully requested for claims 1-5 in view of the foregoing amendments and the following remarks.

The Examiner is thanked for the careful review and consideration of this case and the withdrawal of certain rejections is acknowledged with appreciation.

The rejections of claim 1 under 35 U.S.C. § 102(b) over WO 00/36046 (Dournel et al.) and of claims 2 and 3 under 35 U.S.C. § 103 over Dournel et al. in view of US 5,662,825 (Bivens et al.) are respectfully traversed.

Claims 1 and 2 are amended as kindly suggested by the Examiner in the recent Office Action to clarify that the refrigerant consists essentially of 1,1,1,3,3-pentafluorobutane. Claim 3 depends from claim 2 and includes the limitations thereof. Accordingly, the refrigerant includes 1,1,1,3,3-pentafluorobutane and excludes any ingredients which would materially affect the basic and novel characteristics of that refrigerant. See *PPG Industries v. Guardian Industries Corp.*, 156 F.3d 1351, (Fed. Cir. 1998).

As explained previously, a basic characteristic of any chemical compound is its boiling point. The boiling point of a refrigerant is especially important as the refrigeration cycle involves repeatedly evaporating and liquefying the refrigerant, over and over again. Accordingly, a refrigerant with too low a boiling point is not suitable as it would be difficult to condense the refrigerant back into a liquid. Similarly, a refrigerant with too high a boiling point is

undesirable as the refrigerant will not readily evaporate into a liquid when it is depressurized. Thus, the addition of any ingredient that significantly affects the boiling point of a refrigerant has a material effect on a basic property of that refrigerant.

The Dournel et al. reference (reviewed as U.S. Patent No. 6,660,709) relates to combinations of 1,1,1,3,3-pentafluorobutane and more than 5% of at least one non-flammable fluoro compound. (See the abstract). Dournel et al. indicates that using 1,1,1,3,3-pentafluorobutane requires precautions due to the flammability of 1,1,1,3,3-pentafluorobutane. Accordingly, a non-flammable fluoro compound is provided such as a perfluorocarbon, hydrofluorocarbon with more than 3 carbon atoms, fluoroamines or fluoro ether. See col. 1, lines 41-44. The reference also indicates that preferred refrigerants include 1,1,1,3,3-pentafluorobutane and a non-flammable fluoro compound, especially where the compound is azeotropic or pseudo-azeotropic. An azeotropic or pseudo-azeotropic mixture of liquids boils together. An azeotropic mixture typically has a different boiling point than the compounds in the mixture taken alone. Thus, the Dournel et al. reference teaches the use of 1,1,1,3,3-pentafluorobutane in a mixture to reduce the flammability problems associated with 1,1,1,3,3-pentafluorobutane.

Dournal et al. does not teach using 1,1,1,3,3-pentafluorobutane alone as a refrigerant, or in a mixture with compounds that do not affect the basic and novel characteristics of the compound, as is claimed. Rather, the fluoro

compounds Dournel et al. teaches mixing with the 1,1,1,3,3-pentafluorobutane all result in a material change in the resulting mixture when compared against 1,1,1,3,3-pentafluorobutane taken alone. The very purpose of the fluoro compounds mixed with 1,1,1,3,3-pentafluorobutane as taught by Dournel et al. is to change and avoid certain undesirable characteristics. Thus, not only does Dournel et al. not teach a refrigerant consisting essentially of 1,1,1,3,3-pentafluorobutane as claimed, the reference actually teaches away from such a refrigerant. Accordingly, Dournel et al. does not teach or suggest the methods of claim 1-3.

Bivens et al. does not make up for the failure of Dournel et al. to teach 1,1,1,3,3-pentafluorobutane (HFC 365 mfc) as a refrigerant. Bivens et al. teaches an entirely different compound, namely 1,1,1,3,3-hexafluoropropane (HFC 236fa) as a refrigerant. These two compounds are very different, as evidenced by, among other things, their boiling points. The former boils at 40°C, whereas the latter boils at -15°C. Thus, neither of the references, either alone or in combination, teaches a refrigerant consisting essentially of 1,1,1,3,3-pentafluorobutane.

Accordingly, reconsideration and withdrawal of these rejections are respectfully requested.

CONCLUSION

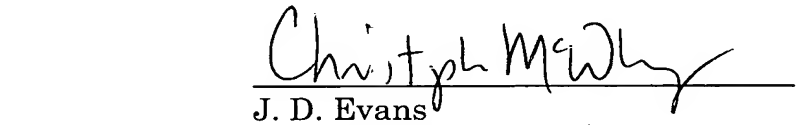
In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #037110.52895US).

Respectfully submitted,

October 11, 2005



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